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CATALOGUE OF A COLLECTION OF BIRDS FROM COSTA RICA

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CATALOGUE OF A COLLECTION OF BIRDS FROM COSTA RICA.*

BY JOHN FARWELL FERRY.

The birds considered in this paper were collected in Costa Rica during January, February and March of 1908 in localities upon the country's Atlantic slope. Though the rainy season was in progress, collecting was not seriously interfered with considering the time as a whole.

Guayabo was visited from January 15 to February 6. The term Guayabo appears to apply generally to a rich grazing district lying several hours' horseback journey below Turrialba Station on the Northern Railway of Costa Rica. This locality is one of heavily forested slopes, cut by deep wooded ravines, and interspersed with great reaches of luxuriant lawn. Lofty, wide-branching trees stand singly or in groups about the lawns, and are a picturesque feature of the landscape. They play an important part in the bird-life of the region. The top of each tree, a small forest in itself, attracts a great number of birds at dusk, which come to roost for the night. About sun-down these tree-tops seem fairly alive with birds.

Don Juan Gomez was my host at Guayabo, and at his comfortable estate everything was done for my comfort and to assist me in my work. The consideration and courtesy he extended to me is so highly appreciated that a mere mention of it seems totally inadequate.

With pack animals, a journey of some twenty miles was made in a northerly direction from Cartago, a former capital of the Republic. The locality thus reached is known as Coliblanco, an extensive region situated upon one of the buttressing slopes of the Volcan de Turrialba at an altitude of about 6,500 feet. The region is heavily timbered, hilly, and cut by numerous ravines through which small mountain torrents flow. Numerous clearings are cultivated or used for grazing. My headquarters were at the estate of Don Aurelio Calleja, a prosperous resident of Cartago. The scenery at Coliblanco was of great beauty, the more rugged growth of a high altitude blending with tropical luxuriance. Collecting was fairly good in this locality,

*Posthumous; Mr. Ferry died February 11, 1910.

though dense shrubbery and jungle-grown ravines offered many a retreat where birds, though abundant, could not be secured. The collector's most serious difficulty, however, was due to the abundance of parasitic growths upon the trunks and branches of the trees. Epiphytes, ferns, orchids and climbing vines occurred in such profusion that many a bird, fairly killed, would lodge during its fall in one of these parasites. Its recovery was usually impossible. Back of the potrero, or pasture, surrounding the Calleja estate, was a steep forested slope. A climb of a thousand feet brought one to a series of grass-covered meadows, dotted with tall trees, shrubbery, and hemmed in by gloomy forests. Here the bird-life was noticeably different from that lower down. The Calandria or Three-wattled Bell-bird, was here in abundance, though absent below. Other birds found here in large numbers, though rare or absent at the lower level, were *Myioborus aurantiacus*, *Myioborus torquatus*, *Oreothlypis gutturalis* and *Catharus gracilirostris*. Quezals were reported as being very common here.

The nights at Coliblanco were extremely chilly and the days varied from moderate to cool. Much rain fell during my stay, which extended from February 8 to 23.

The next region visited was at the base of the Ash-cone of the volcano of Turrialba, at an altitude of about 9,000 feet. It was a five hours' climb by pack animals from Coliblanco. Don Francisco Gutierrez gave me lodgings at his lecheria, or dairy-farm, and was a most agreeable companion and kind host. Collecting was done here from February 23 to March 2. The natural beauty of the region excites the greatest admiration. The lecheria was in the midst of an open park-like forest. The foliage varied from the brightest green to copper color, while each tree bore flowers of various hues, either of its own or of some parasitic growth, as of vines, bromeliads, or orchids. As can be imagined, the park was a paradise for hummers as well as for other insectivorous birds that preyed upon the insects that sought the flowers. A heavy forest surrounds the Ash-cone, and many deep and densely wooded ravines make much of the region almost impassable. However, grassy slopes occur here and there, a boon alike to the cattle-raiser and the collector. Two characteristic birds of this place are the Quezal and the Three-wattled Bell-bird.

The volcano was ascended to its summit (11,067 feet) and its sole avian inhabitants were the Volcano junco and *Selasphorus torridus*.

On March 3 the journey to sea-level was begun. Odd days were

utilized for collecting, on January 14 at Turrialba Station and on March 9 at Port Limon.

Acknowledgments are gratefully made to the United Fruit Company, who gave me much advice and kindly treatment, including the placing at my disposal of a part of their shipping-room. Here, with excellent facilities and materials for packing, I was able to prepare my specimens for shipment with great success. Mention should also be made of a provision made for me by Mr. Musgrove, Superintendent of the Electric Lighting Plant of Port Limon. In a warm, dry place near the boilers I was allowed to dry perfectly several hundred skins. The humid conditions at the coast made the drying of these skins impossible without the aid of artificial heat.

I also gratefully acknowledge courtesies extended to me by the Northern Railway of Costa Rica. They placed at my disposal transportation facilities which allowed me the fullest possible use of their lines. Mr. Donaldson, the United States Consul at Port Limon, has also my grateful appreciation for services rendered.

Finally, I wish to thank Mr. Ridgway and others at the National Museum, who kindly assisted me in the identification of several puzzling species.

Ardeidæ.

Tigrisoma excellens *Ridg.*

1 specimen said to have been taken at Juan Vinas, near Turrialba Station. The skin was given to me. It is an immature bird (sex?).

Falconidæ.

Buteo platypterus (*Vieill.*).

2 specimens. ♀ ad. Coliblanco. February 11; ♀ im. Port Limon, March 9.

Micrastur interstes *Bangs.*

1 specimen. ♂ ad. Guayabo.

This specimen is referred to the above form recently described by Bangs, as it occurs within the range allotted to the new species, in fact not far from Cartago, the type locality. The bird was perched at the edge of a small clearing in a dense forest and allowed a close approach. The stomach contained hair of a small mammal.

Falco sparverius *Linn.*

5 specimens. Guayabo 3 ♀, 1 ♂; Coliblanco 1 ♂.

These specimens are easily referable to the eastern form. This species was common about Guayabo.

Cracidæ.

Chamæpetes unicolor *Salv.*

2 specimens. Volcan de Turrialba 2 ♀. Quite common in the deep heavily-wooded ravines about the volcano at timber-line. The bare skin in front of the eyes is ultramarine in life. These birds are favorite game birds. Their flesh is white and finely flavored. While walking at the bottom of a rocky gorge densely wooded on either side, I was attracted by an uncanny, indescribable sound. It might have been a partridge drumming a great distance away, but it evidently came from close at hand. At length I made out a big, black bird in the shrubbery hanging from the steep side of the ravine. At the report of my gun the bird fell and another flew towards me and alighted a few feet away. These birds appeared to have little fear of man.

Ortalis cinereiceps (*Gray*).

5 specimens. 3 ♂, 1 ♀, 1 sex (?). They were common upon the heavily wooded hillsides marking the course of Guayabo Creek They were usually met in small bands and were quite fearless. When compared with specimens in this Museum the Guayabo birds are seen to possess darker heads and more richly colored breasts — deeper olivaceous brown. This possibly may be due to the excellent condition of plumage which the birds are in. The birds are known by the widely-used name of Chachalaca.

Rallidæ.

Aramides albiventris plumbeicollis *Zeledon.*

1 specimen. Guayabo ♂. Compared with a specimen from Costa Rica the Guayabo bird is typical. This bird was taken by the side of a tiny stream flowing down a hillside through an open forest. No others were seen.

Columbidæ.

Columba flavirostris *Wagl.*

3 specimens. Guayabo ♂. These birds were abundant about the potrero, where they resorted to dead branches of the tallest trees during the sunny mornings. At such time their loud cooing could be heard anywhere. They roost in the heavy foliage of tall trees. They feed upon wild fruits, their crops being frequently distended with large, succulent berries. (Native name = "Berengena.") They are rather shy birds and are known among the natives as "Paloma," the common name for pigeon.

Columba albilinea crissalis *Salv.*

4 specimens. Vol. de Turrialba ♂. These birds were abundant in the open forest about the lecheria. What impresses the stranger most is the exceedingly loud flapping of their wings, just as they launch into flight. They have a habit of remaining perfectly quiet, well hidden in the foliage, and fly only when the hunter is beneath the tree. This sudden, loud wing-beating is then often quite startling.

Columba nigrirostris *Scl.*

1 specimen. Guayabo ♂. Apparently much rarer than *C. flavirostris* with which it was associated.

Cuculidæ.

Piaya cayana thermophila (*Scl.*).

4 specimens. Guayabo 1 ♂, 2 ♀; Coliblanco 1 ♂.

This bird was common at Guayabo, where it resorted to the dense shrubbery. Its habit of running along branches like a squirrel was observed several times. It effects its escape in this way frequently. When alarmed, though, the bird usually seeks safety by remaining perfectly quiet. At Coliblanco the birds were observed several times in the tops of high trees.

Crotophaga sulcirostris *Swains.*

10 specimens. Guayabo 3 ♂, 4 ♀; Coliblanco 1 ♀; Turrialba Station 2 ♀.

These birds are abundant in the lowlands of Costa Rica, becoming scarcer at higher altitudes. At Guayabo they were abundant, but only 3 or 4 were seen at Coliblanco.

Psittacidæ.

Conurus finschi *Salv.*

1 specimen. Guayabo ♂. Screaming flocks of these were of frequent occurrence. This specimen has no sign of red on the head, but it has the red under wing-coverts of *finschi*.

Amazona salvini (*Salvad.*).

2 specimens. Guayabo 1 ♂, 1 ♀. When these specimens are compared with a series they show themselves brighter and lighter colored, with the under side of the tail bright grass green. The other specimens have tails strongly tinged with golden yellow.

This handsome species was abundant about Guayabo, flying about and feeding in large flocks. In some cases, however, the birds were seen going in pairs. As commonly true among parrots when mated, each individual of a pair shows great devotion to the other, refusing to leave the site where its mate has been killed. These birds were very shy, and often eluded the collector by keeping perfectly quiet while hidden in the foliage.

Pionus senilis (*Spix*).

2 specimens. Guayabo ♂, ♀. This pair was secured from the top of a tree at one shot. Dissection showed active sexual organs.

Pionopsittacus hæmatotis (*Scl. & Salv.*).

5 specimens. Guayabo ♂, ♀; Coliblanco 2 ♂, 1 ♀.

These birds were usually seen in pairs, each bird of which manifested the greatest attachment for the other. A favorite habit of the birds was to perch on a high dead branch and sun themselves for an hour or longer.

Momotidæ.

Momotus lessoni (*Less.*).

1 specimen. Guayabo ♀.

Prionornis platyrhynchus minor *Hart.*

1 specimen. Guayabo ♀.

Trochilidæ

Heliothrix barroti (*Bourc. & Muls.*).

1 specimen. Guayabo ♂. Several of these strikingly colored birds were seen, but they were not common.

Hemistephania veraguensis (*Salv.*).

2 specimens. Coliblanco 2 ♀.

Thalurania columbica venusta (*Gould*).

11 specimens. Guayabo 9 ♂, 2 ♀.

Very common about stubs grown with flowering vines. Dissection showed birds were breeding or about to breed.

Elvira nigriventris (*Lawr.*).

1 specimen. Coliblanco ♂.

Eupherusa egregia *Scl. & Salv.*

3 specimens. Coliblanco 1 ♂, 2 sex?.

Panterpe insignis *Cab. & Heine.*

14 specimens. Vol. Turrialba 9 ♂, 4 ♀, 1 sex?.

This humming-bird was one of the characteristic birds of the forest growing at the base of the Ash-cone. The abundance of flower-bearing trees and vines made the open forest about the lecheria an ideal humming-bird locality. The males were constantly engaged in combat, performing some amazing antics while on the wing. This species was breeding at this season. A fully formed yolk was found in one female, while two others showed ovaries at the height of activity. This species was noticeable for the frequency with which it resorted to perching and the length of time it spent in this position.

Amazilis tzacatl (*Llave*).

14 specimens. Guayabo, 10 ♂, 2 ♀; Fort Limon, 1 ♀, 1 sex?.

A male taken at Guayabo on January 30 had testes in a state of activity, and a female taken at the same place on January 27 showed active ovaries.

Eugenes spectabilis (*Lawr.*).

2 specimens. Coliblanco, 2 ♀.

Phæthornis guy coruscus *Bangs.*

1 specimen. Coliblanco ♀.

Oreopyra calolæma *Salv.*

6 specimens. Coliblanco 4 ♂, 1 ♀, 1 sex?.

These birds were common about a flowering vine completely enclosing a huge tree trunk. Few or none were seen elsewhere. The above tree stood isolated in the potrero, or pasture.

Heliodoxa jacula henryi (*Lawr.*).

9 specimens. Coliblanco 5 ♂, 4 ♀. One female is in moulting plumage. These birds, with the preceding species, were common about the tree referred to.

Selasphorus torridus *Salv.*

10 specimens. Vol. de Turrialba 9 ♂, 1 sex?.

This bird was common about the park-like forest, adjacent to the lecheria, and with the exception of *Junco vulcani* was the only bird found near the summit of the volcano. This hummer followed the vegetation to its limit.

Micropodidæ.

Chætura gaumeri *Lawr.*

2 specimens. Guayabo ♂, ♀. Common.

Trogonidæ.

Pharomacrus mocinno costaricensis (*Cab.*).

7 specimens. Coliblanco 1 ♀. Vol. de Turrialba 2 ♂, 4 ♀.

In the heavy forest at the base of the Ash-cone the Quezal was common, though one unacquainted with its habits might never see one. It frequents the dense forests and when in the shade of heavy foliage its brilliant colors are surprisingly inconspicuous. The birds are of a very retiring disposition and seldom betray their whereabouts by any sound. The male, however, has a low plaintive

whistle which is occasionally heard. The natives imitate this note and lure the birds to their destruction. The females are much oftener seen than the males.

A nest of this species was found in a dead stump standing in a partially cleared forest. The female's head was seen protruding from a hole about the size of a flicker's and some 12 feet from the ground. While we were in the vicinity of the nest the male bird came flying rapidly by, his beautiful tail plumes streaming behind in a most graceful and striking manner. He alighted upon a dead limb about 30 feet away in the full sunlight, and where his colors shone in all their glory. The two males observed — both were collected — sat with their backs toward the observers. They never showed a sign of the brilliant red breast. A boy climbed to the nest above referred to, but reported that it was empty.

Trogon puella *Gould.*

2 specimens. Guayabo 2 ♀. These birds frequent large heavily foliaged trees, which usually bear fruit upon which the birds feed. A round fruit with a thick rind appeared to be a favorite.

Trogon caligatus *Gould.*

4 specimens. Guayabo 4 ♂.

Trogon massena *Gould.*

1 specimen. Guayabo ♂.

This bird is noticeably blue on the rump, but on comparison with a large series in the U. S. National Museum this peculiarity was shown to be merely a case of individual variation.

Galbulidæ.

Galbula melanogenia *Scl.*

1 specimen. Guayabo, sex?. Found in heavily wooded portion of forest sitting perfectly motionless on a branch.

Capitonidæ.

Semnornis frantzii (*Scl.*).

6 specimens. Coliblanco 2 ♂, 4 ♀. This very odd bird was common in trees studding the potrero about the farm house, and was

met in low situations at the edges of ravines. It feeds in small flocks, climbing clumsily about the branches. It shows practically no fear of man, and three or four can be collected from a single tree.

Rhamphastidæ.

Rhamphastos brevicarinatus *Gould.*

3 specimens. Guayabo 2 ♂, 1 ♀.

Common about edges of heavy forest, and in fruit-bearing trees — usually in small bands. They spend much time sitting motionless on a limb in the dense shade during the heat of the day. Frequently they are betrayed only by the brilliant lemon-yellow throat patch. This stands out in bold relief and seems utterly detached from the bird. It might be a yellow leaf or a piece of hanging fruit.

Pteroglossus torquatus (*Gmelin*).

5 specimens. Guayabo 4 ♂, 1 ♀.

Common. Usually in flocks. When one of their number is shot, the whole flock will remain in the vicinity, and as many as six or seven individuals can thus be secured. Testes of one male showed approaching activity.

Aulacorhamphus cæruleigularis *Gould.*

15 specimens. Guayabo 4 ♂, 3 ♀; Coliblanco 6 ♂, 2 ♀. Common in small flocks feeding on fruits. It is sluggish and unwary. At Guayabo it was found roosting in the tops of very high trees.

Picidæ.

Campephilus guatemalensis (*Hart.*).

1 specimen. Guayabo ♂. This specimen was the only one seen.

Dryobates villosus extimus *Bangs.*

7 specimens. Coliblanco 4 ♂, 1 ♀; Vol. de Turrialba 1 ♂, 1 ♀. Common at Coliblanco, less so at base of Ash-cone.

Sphyrapicus varius (*Linn.*).

2 specimens. Coliblanco ♀ February 13, ♀ February 15. One of these birds was moulting. Others were seen.

Centurus pucherani (*Malh.*).

8 specimens. Guayabo 4 ♂, 3 ♀; Port Limon 1 ♂.

These handsome woodpeckers were abundant at Guayabo. Not observed at Coliblanco or farther up the volcano.

Centurus hoffmanni *Cab.*

5 specimens. Guayabo 3 ♂, 2 ♀. Common.

Chloronerpes simplex *Salv.*

1 specimen. Guayabo ♀.

Chloronerpes yucatanensis (*Cabot*).

4 specimens. Guayabo 1 ♂, 3 ♀.

Tyrannidæ.

Copurus leuconotus *Lafr.*

1 specimen. Guayabo ♂. Shot from the top of a tall tree.

Rhynchocyclus cinereiceps (*Scl.*).

1 specimen. Guayabo.

Todirostrum cinereum finitimum *Bangs.*

6 specimens. Guayabo 6 ♂. Common in underbrush and at edges of clearings.

Lophotriccus squamæcristatus minor *Cherrie.*

1 specimen. Guayabo.

Leptopogon superciliaris *Cabanis.*

1 specimen. Guayabo ♂.

Myiopagis placens accola *Bangs.*

1 specimen. Guayabo ♀.

Tyranniscus vilissimus parvus (*Lawr.*).

5 specimens. Guayabo 2 ♂; Coliblanco 1 ♂, 2 ♀. Testes showed approaching activity.

Elænia martinica subpagana (*Scl. & Salv.*).

1 specimen. Guayabo ♀.

Elænia frantzii *Lawr.*
5 specimens. Coliblanco 1 ♂; Vol. de Turrialba 4 ♂.

Myiozetetes granadensis *Lawr.*
5 specimens. Guayabo 1 ♂, 3 ♀, 1 sex?.

Myiozetetes texensis (*Giraud*).
8 specimens. Turrialba Station 1 ♂; Guayabo 3 ♂, 4 ♀.
Common about banana plantation near house.

Megarynchus pitangua mexicanus (*Lafr.*).
8 specimens. Guayabo 1 ♂, 5 ♀; Port Limon 1 ♂, 1 ♀.
These birds have a loud, spirited call, which they utter in chorus at daybreak. During the day they frequent dead treetops.

Myiodynastes hemichrysus (*Cab.*).
7 specimens. Coliblanco 3 ♂, 4 ♀.

Terenotriccus erythrurus fulvigularis (*Salv. & Godman*).
1 specimen. Guayabo ♀.

Mitrephanes aurantiiventris (*Lawr.*).
8 specimens. Coliblanco 7 ♂, 1 ♀.
Common in shrubbery and at edges of ravines.

Empidonax flaviventris (*Baird*).
4 specimens. Guayabo 2 ♀, 1 ♀, 1 sex?. Dates: January 28, February 3, February 4 (2).

Empidonax flavescens *Lawr.*
20 specimens. Coliblanco 13 ♂, 6 ♀, 1 sex?.

Empidonax atriceps *Salv.*
18 specimens. Coliblanco 1 ♂, 3 ♀. Vol. Turrialba 9 ♂, 3 ♀, 2 sex?.

Myiochanes lugubris (*Lawr.*).
2 specimens. Coliblanco ♂, ♀. In open forest of tall trees.

Nuttallornis borealis (*Swains.*).
1 specimen. Guayabo ♀. January 31.

Myiarchus lawrenceii bangsi *Nelson.*

14 specimens. Turrialba Station, 1 sex?; Guayabo 8 ♂, 4 ♀, 1 sex?.

Tyrannus melancholicus satrapa (*Cab. & Heine*).

12 specimens. Guayabo 7 ♂, 5 ♀.

A very common bird about plantations and in the vicinity of dwellings.

Muscivora tyrannus (*Linn.*).

3 specimens. Guayabo 3 ♂. Not common.

Pipridæ.

Corapipo leucorrhoa altera *Hellmayr.*

1 specimen. Guayabo ♂, in immature plumage.

Cotingidæ.

Tityra semifasciata costaricensis *Ridg.*

7 specimens. Guayabo 4 ♂, 3 ♀.

Tolerably common in flocks of three and four on heavily wooded slopes.

Pachyrhamphus versicolor costaricensis *Bangs.*

1 specimen. Coliblanco 1 ♂.

Pachyrhamphus cinnamomeus *Lawr.*

2 specimens. Guayabo, 1 ♂, 1 ♀.

Erator albitorques (*Du Bus*).

1 specimen. Guayabo ♂.

Procnias tricarunculata (*J. and E. Verreaux*).

8 specimens. Vol. de Turrialba 7 ♂, 1 sex?.

Abundant in the heavy forest about the base of the Ash-cone. They are seldom seen, but their remarkable notes are heard with great frequency through the greater part of the day. A native showed me a successful way of hunting these birds. It consisted in going into a heavily shaded portion of the forest and remaining per-

fectly quiet. After a long wait, we began to get glimpses of the birds in the heavy foliage, and soon a bird flew to a branch in plain view. Most of the above 8 specimens were secured in this way. The native name of this bird is "Calandria."

Dendrocolaptidæ.

Synallaxis pudica *Scl.*

2 specimens. Guayabo 2 ♂. Frequents low thickets.

Siptornis erythrops (*Scl.*).

1 specimen. Guayabo ♂.

Pseudocolaptes lawrencei *Ridg.*

2 specimens. Vol. de Turrialba.

Automolus cervinigularis hypophæus *Ridg.*

1 specimen. Guayabo ♂.

Xenicopsis subalaris lineatus (*Lawr.*).

1 specimen. Coliblanco ♂. This species appears to vary greatly in the amount of rufous on the nape and on the throat and breast.

Xenops genibarbis *Ill.*

1 specimen. Guayabo ♂. The testes of this bird were active.

Xenops rutilus *Licht.*

1 specimen. Guayabo ♂. Testes showed recent or approaching activity.

Premnoplex brunnescens (*Scl.*).

3 specimens. Guayabo, ♀; Coliblanco ♂, ♀.

Margarornis rubiginosa *Lawr.*

9 specimens. Coliblanco 2 ♂, 1 ♀; Vol. de Turrialba 2 ♂, 4 ♀.

These birds were very common in the open park-like forest at the base of the Ash-cone.

Dendrornis nana costaricensis (*Ridg.*).

1 specimen. Guayabo ♀.

Xiphocolaptes emigrans costaricensis *Ridg.*

1 specimen. Guayabo ♀.

Picolaptes affinis (*Lafr.*).

15 specimens. Coliblanco 5 ♂, 4 ♀, 1 sex?; Vol. de Turrialba 2 ♂, 3 ♀.

This is one of the most characteristic birds about the volcano.

Picolaptes compressus (*Cab.*).

4 specimens. Guayabo 2 ♂, 1 ♀; Port Limon 1 ♂.

Formicariidæ.

Cymbilanius lineatus fasciatus *Ridg.*

2 specimens. Guayabo ♀, 1 sex?.

Found in tree tops in dense low forests.

Thamnophilus doliatus mexicanus *Allen.*

1 specimen. Guayabo ♂.

Dysithamnus mentalis septentrionalis *Ridg.*

5 specimens. Guayabo 5 ♀.

Cercomacra tyrannina crepera *Bangs.*

1 specimen. Guayabo ♂.

Pteroptochidæ.

Scytalopus argentifrons *Ridg.*

1 specimen. Coliblanco ♂. In deep, jungle-grown ravine, I heard the bird's sharp, scolding note and remained perfectly quiet. The curiosity of the bird led it to within a few feet of me.

Turdidæ.

Catharus gracilirostris *Salv.*

11 specimens. Vol. de Turrialba 5 ♂, 2 ♀; Coliblanco 3 ♂, 1 ♀.

Common among fallen trees and shrubbery. Like a small *Hylocichla* in general behavior.

Myadestes melanops *Salv.*

4 specimens. Coliblanco 3 ♂, 1 ♀.

This very retiring bird was occasionally seen in ravines and in dense patches of shrubbery.

Planesticus grayi casius (*Bonap.*).

4 specimens. Guayabo 2 ♂, 2 ♀. These birds roosted in the tops of very high trees, coming from all directions at evening time.

Planesticus plebejus (*Cab.*).

24 specimens. Coliblanco 18 ♂, 4 ♀; Vol. de Turrialba 2 ♂.

This species was a characteristic bird about the potrero at Coliblanco. They came in large numbers to fruit-bearing trees. The plumage is very loosely embedded in the skin. The birds have a call note like our American robin.

Planesticus nigrescens (*Cab.*).

14 specimens. Vol. de Turrialba 9♂, 5♀.

This species was abundant in the open forest at base of Ash-cone. It is very robin-like in character, and not as shy as the two preceding species.

Troglodytidæ.

Heleodytes zonatus costaricensis (*Berl.*).

15 specimens. Guayabo 4 ♂, 6 ♀, 1 sex?; Coliblanco 1 ♂, 3 ♀.

This bird seemed to be in every conceivable sort of bird haunt. It was as much at home among the tops of the tallest trees as in low shrubbery or about fallen trees. Its favorite spot, however, is probably in densely clustered vines growing about tree trunks.

Troglodytes musculus intermedius (*Cab.*).

15 specimens. Guayabo 4 ♂, 5 ♀; Coliblanco 5 ♂, 1 ♀.

This series, all taken upon the Atlantic slope, is identical with a specimen taken in San José, the type locality of the species. These birds were common in haunts usually frequented by wrens, but also

showed a decided fondness for patches of tall grass. They were frequently flushed from such places, after the manner of the marsh wren.

Troglodytes ochraceus *Ridg.*

3 specimens. Coliblanco ♂, ♀; Vol. de Turrialba ♂.

This spry little wren was found about logs and hollow trees standing in open places.

Henicorhina prostheleuca pittieri (*Cherrie*).

1 specimen. Guayabo ♀.

Thryophilus thoracicus (*Salv.*).

2 specimens. Guayabo 1 ♀, 1 sex?.

Sylviidæ.

Polioptila superciliaris magna *Ridg.*

4 specimens. Guayabo 1 ♂, 1 ♀, 2 sex?.

Hirundinidæ.

Progne chalybea (*Gmelin*).

2 specimens. Guayabo ♂, ♀.

Stelgidopteryx salvini *Ridg.*

1 specimen. Guayabo ♀. Shot from a flock, probably of the same species.

Ptilogonatidæ.

Ptilogonys caudatus *Cab.*

10 specimens. Vol. de Turrialba 4 ♂, 6 ♀.

This handsome bird was one of the characteristic species of the open forests about the volcano. Its habits are flycatcher-like. The species was breeding.

Phainoptila melanoxantha *Salv.*

5 specimens. Vol. de Turrialba 5 ♂.

A retiring species loving heavy foliage.

Vireonidæ.

Vireosylva philadelphica *Cass.*

3 specimens. Guayabo 2 ♂, Feb. 1 to Feb. 4; Port Limon ♀, Mar. 9.

Vireosylva josephæ costaricensis *Ridg.*

1 specimen. Coliblanco ♂.

Lanivireo flavifrons (*Vieill.*).

1 specimen. Guayabo ♂, February 4.

Vireo carmioli *Baird.*

4 specimens. Coliblanco 2 ♂, 1 ♀; Vol. de Turrialba 1 ♂.

Cyclarhis flavipectus subflavescens (*Cab.*).

1 specimen. Coliblanco ♀.

Corvidæ.

Psilorhinus mexicanus cyanogenys (*Sharpe*).

6 specimens. Guayabo 1 ♂, 4 ♀; Coliblanco 1 ♂.

This noisy jay was very common at Guayabo, but less so at Coliblanco. They usually rove about in small bands (5 to 10) screaming a great deal. They are magpie-like in habits, and often visit the vicinity of dwellings.

Cœrebidæ.

Diglossa plumbea *Cab.*

24 specimens. Coliblanco 10 ♂, 6 ♀; Vol. de Turrialba 5 ♂, 3 ♀.

This interesting little bird haunted vine-hung trees, many individuals being found together. It is very active, flitting quickly from twig to twig and keeping almost constantly in the deep shade. Occasionally one will fly out and hover in front of a flower after the manner of a humming-bird. The natives sometimes refer to this bird as "Azul." The males look quite blue in the sunlight. One female had been incubating.

Chlorophanes spiza guatemalensis (*Scl.*).
4 specimens. Guayabo 2 ♂; Port Limon 1 ♂, 1 ♀.

Dacnis venusta *Lawr.*
1 specimen. Guayabo ♂.

Cœreba mexicana (*Scl.*).
3 specimens. Guayabo 2 ♀, 1 ♂ im.
Tolerably common about plantations. Ovaries of one female active.

Mniotiltidæ.

Mniotilta varia (*Linn.*).
3 specimens. Guayabo 1 ♂, Jan. 20; Port Limon 1 ♀, Mar. 9; Coliblanco 1 ♂, Feb. 19.

Helmitheros vermivorus (*Gmelin*).
1 specimen in fine plumage. Guayabo ♂, January 24.

Vermivora peregrina (*Wilson*).
18 specimens. Guayabo 8 ♂, 5 ♀, 1 sex?; Turrialba Station 1 ♀; Vol. de Turrialba 1 ♂, 1 sex?; Port Limon 1 ♀.
This species was the commonest North American bird met in the tropics. At Guayabo it was profusely abundant. A male taken at Guayabo on January 16 was undergoing an extensive moult.

Vermivora chrysoptera (*Linn.*).
4 specimens. Guayabo 3 ♂, 1 ♀.
Tolerably common at edges of deeply wooded ravines. In full spring plumage.

Oreothlypis gutturalis (*Cab.*).
8 specimens. Coliblanco 4 ♂, 1 ♀. Vol. de Turrialba 3 ♂.
Found among outer branches of high trees. The lower limit of its range was 1,000 feet above Coliblanco.

Compsothlypis pitiayumi speciosa *Ridg.*
8 specimens. Guayabo 3 ♂, 3 ♀, 1 sex?; Coliblanco 1 ♂.
The habits of this bird are very like those of the Parula warbler.

Dendroica magnolia (*Wilson*).
1 specimen. Guayabo ♀, January 16.

Dendroica coronata (*Linn.*).

3 specimens. Guayabo 2 ♂, 1 ♀, January 20, 23.

Dendroica virens (*Gmelin*).

7 specimens. Coliblanco 1 ♂, February 20, 3 ♀ Feb. 9, 13, 22; Vol. de Turrilaba 3 ♂, Feb. 25, 26, 27.

Dendroica fusca (*Mull.*).

6 specimens. Guayabo 1 ♂, Jan. 24, 3 ♀, Feb. 4, 5, 1 sex? Jan. 23; Coliblanco 1 ♂, Feb. 22. Only one male in full spring plumage.

Dendroica pensylvanica (*Linn.*).

13 specimens. Guayabo ♂, January 16, 17, 25, 26, 30, February 1, ♀ January 27, 20, 24, 28, February 4, 1; Port Limon ♀, Mar. 9.

But one of these specimens has the fully adult plumage — a male taken at Guayabo January 25.

Oporornis philadelphia (*Wilson*).

1 specimen. Guayabo ♂, February 4.

Geothlypis trichas (*Linn.*).

1 specimen. Guayabo ♂ im., January 27.

Geothlypis semiflava bairdi (*Nutting*).

2 specimens. Guayabo 1 ♂, 1 sex?.

Wilsonia pusilla (*Wilson*).

5 specimens. Guayabo ♂, January 20, ♀ January 28, January 28, sex? January 25, January 26.

These specimens are quite easily referable to the above species. It is noteworthy that all specimens of *pusilla* were taken below 4,000 feet, they apparently not mingling with *pileolata*, the bird found at higher elevations. Bangs records *pusilla* from northwestern Costa Rica, and implies in his remarks concerning it that it is a bird occurring at lower levels than *pileolata**.

Wilsonia pusilla pileolata (*Pallas*).

35 specimens. Coliblanco 15 ♂, 8 ♀, 5 sex?; Vol. de Turrialba 3 ♂, 1 ♀, 3 sex?.

These birds were profusely abundant about the potrero at Coliblanco. They were in all conceivable situations, and frequently

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uttering their sharp sparrow-like note. About the volcano they were less common. This is evidently a bird of high altitudes while within its winter range. See remarks on preceding species.

Setophaga ruticilla (*Linn.*).

4 specimens. Guayabo 3 ♂, Jan. 16, Feb. 1, 1 ♀ Jan. 28.

Common while migrating. Males in fully adult plumage.

Myioborus aurantiacus (*Baird*).

19 specimens. Guayabo 2 ♂, 2 ♀, 1 sex?; Coliblanco 10 ♂, 4 ♀.

Haunts shrubbery. Redstart-like in habits.

Myioborus torquatus (*Baird*).

8 specimens. Coliblanco 3 ♂, 4 ♀; Vol. de Turrialba 1 sex?.

Occurs at edges of deep ravines, in shrubbery, about fallen logs, etc. Very sprightly and pretty. This and the preceding are quite similar in habits.

Basileuterus rufifrons delattrii (*Bonap.*).

9 specimens. Guayabo 5 ♂, 3 ♀, 1 sex?.

These birds show a decided grayness at the back of the neck, but comparison with a series in the National Museum shows this feature to be largely a matter of individual variation.

Basileuterus melanogenys *Baird.*

4 specimens. Coliblanco 2 ♂; Vol. de Turrialba 2 ♂.

These birds were met at the edges of heavy forests. They live near the ground and are somewhat wren-like in habits.

Basileuterus culicivorus godmani *Berlep.*

1 specimen. Guayabo ♂.

Tangaridæ.

Chlorophonia callophrys (*Cab.*).

4 specimens. Guayabo 1 ♂; Coliblanco ♂, ♀; Vol. de Turrialba ♂.

In heavy foliage of tree-tops.

Euphonia luteicapilla (*Cab.*).

1 specimen. Guayabo ♂.

Euphonia gouldi *Scl.*

1 specimen. Guayabo ♂.

Calospiza icterocephala (*Bonap.*).

1 specimen. Guayabo ♀.

Calospiza guttata chrysophrys (*Scl.*).

1 specimen. Guayabo ♀.

Calospiza gyroloides (*Lafr.*).

2 specimens. Guayabo 2 ♂.

These birds usually keep well hidden among the heavily foliaged tree-tops.

Calospiza dowii (*Salv.*).

7 specimens. Coliblanco 5 ♂, 2 ♀.

Common in palms, usually going about in two's and three's.

Calospiza larvata fanny (*Lafr.*).

4 specimens. Guayabo 1 ♂, 1 ♀; Port Limon 1 ♂, 1 ♀.

Frequents palm-trees.

Tangara cana *Swains.*

6 specimens. Guayabo 4 ♂, 1 ♀; Port Limon 1 ♀.

Common in tops of trees standing in clearings. At night roosts in tops of tallest trees. In daytime visits banana plantations. It is shy and easily alarmed.

Piranga rubra (*Linn.*).

8 specimens. Guayabo 2 ♂ in full plumage, 1 ♀, 3 sex? im.; Coliblanco 1 ♂ im., 1 ♀.

Common. Usually in trees bearing wild berries and fruits.

Piranga bidentata sanguinolenta (*Lafr.*).

5 specimens. Coliblanco ♂.

These birds are very richly colored in comparison with another series in the Field Museum collection.

Ramphocelus passerinii *Bonap.*

10 specimens. Guayabo 6 ♂, 1 ♀, 1 ♂ im.; Port Limon, 1 ♂, 1 ♀.

This handsome tanager was common in shrubbery and about plantations. At this time a male and female were usually found together.

Chlorospingus regionalis *Bangs.*

18 specimens. Coliblanco 12 ♂, 6 ♀.

In company with *C. pileatus* and much like it in habits.

Chlorospingus pileatus *Salv.*

26 specimens. Coliblanco 11 ♂, 1 ♀; Vol. de Turrialba 9 ♂, 5 ♀.

The most abundant bird about Coliblanco, and nearly as common at base of Ash-cone. They are ubiquitous, scarcely a bird haunt seems without them. Shrubbery and vine-covered trees are their favorite places.

Chlorospingus olivaceiceps *Underwood.*

2 specimens. Guayabo 2 ♂.

Icteridæ.

Zarhynchus wagleri (*Gray*).

3 specimens. Turrialba Station 1 ♀; Guayabo ♂; Coliblanco ♀.

Common at Turrialba Station but not elsewhere.

Gymnostinops montezuma (*Less.*).

9 specimens. Guayabo 4 ♂, 4 ♀, 1 sex?.

Abundant at Guayabo but not positively identified elsewhere. No nesting site was discovered and dissection showed the birds were not breeding. They roved about in large, noisy bands. Their great variety of notes is absolutely indescribable. Screeches, grunts, groans and whistles all can be recognized in the discord emanating from a flock. This species and the preceding possess a peculiar strong, musky odor.

Icterus prosthemelas (*Strickland*).

1 specimen. Guayabo ♂.

This specimen was taken in a vine-covered stub standing in the heavy forest.

Icterus galbula (*Linn.*).

3 specimens. Guayabo ♂, moulting into the fully adult plumage; ♂ immature; ♀ in winter plumage. Dates: January 16, February 5, February 5.

Sturnella magna inexpectata *Ridg.*

5 specimens. Guayabo 4 ♂, 1 ♀.

Common on the potrero. The birds were remarkably silent for meadow-larks. Their notes were seldom heard. They had a habit of making short flights and dropping into the long grass. Here they would flush only when the collector was one or two steps away.

Fringillidæ.

Spiza americana (*Gmelin*).

1 specimen. Guayabo ♂, January 20.

Junco vulcani (*Boucard*).

4 specimens. Vol. de Turrialba 2 ♂, 2 ♀.

These birds were common on and slightly below the summit (11,000 ft. approx.). They found shelter in some green bushes growing close to the trickles of water issuing from the sides of the crater. They were the only birds upon the summit of this volcano.

Brachyspiza capensis peruviana (*Less.*).

24 specimens. Coliblanco 12 ♂, 6 ♀; Vol. de Turrialba 5 ♂, 1 ♀.

Wanders about shrubbery in small troops. This bird was not breeding. In its fondness for the vicinity of human dwellings and in many of its habits this bird resembles the slate-colored junco. The Costa Rica species has a pleasing song.

Arremonops conirostris richmondi *Ridg.*

4 specimens. Guayabo 3 ♂, 1 ♀.

Atlapetes gutturalis (*Lafr.*).

1 specimen. Coliblanco ♂.

Pselliophorus tibialis (*Lawr.*).

12 specimens. Coliblanco 3 ♂, 4 ♀; Vol. de Turrialba 3 ♂, 2 ♀.

This bird frequents thickets in clearings and at the edge of forests. It is usually found flitting about brush-piles, fallen trees and in a great variety of places, exploring each place thoroughly. However, it never goes but a short flight from the heavy forest shade. The bright yellow thigh patches may be for the purpose of protectively disguising the bird. Once while looking toward a large fallen tree, in which

were several cave-like spaces, I saw what appeared to be a small, yellow moth flitting about in one of these spaces. A moment later I was surprised to see a bird of the above species hop into view. The supposed wings of the moth were in reality the yellow thigh patches of this bird.

Pezopetes capitalis *Cab.*

2 specimens. Vol. de Turrialba 1 ♀, 1 sex?.

Found in vine-hung tree-tops. It seldom ventured into open view.

Tiaris olivacea pusilla (*Swains.*).

9 specimens. Turrialba Station 2 ♀; Guayabo 2 ♂, 3 ♀; Coliblanco 3 ♂.

A very characteristic bird about plantations, by roadsides and in shrubbery at edges of clearings. Moves about in small flocks.

Sporophila corvina (*Scl.*).

2 specimens. Guayabo ♂; Port Limon ♀.

Not common.

Sporophila morelleti (*Bonap.*).

17 specimens. Turrialba Station 1 sex?, 1 ♂; Guayabo 7 ♂, 6 ♀, 1 sex?; Coliblanco 1 ♀.

There are no fully adult males in the above series.

A common bird in shrubbery and rank vegetation. The birds rove about in small flocks, and there is seldom more than one adult male seen among them — often not one.

Pheucticus tibialis *Baird.*

1 specimen. Coliblanco ♂.

This specimen and one other the only ones seen.

Saltator atriceps lacertosus *Bangs.*

1 specimen. Guayabo ♂.

These birds haunt shrubbery and are of a retiring disposition.

Saltator magnoides medianus *Ridg.*

5 specimens. Guayabo 4 ♀; Port Limon 1 ♂.

When compared with a series in the Field Museum collection the above five birds are practically identical with the series. They are undoubtedly *S. m. medianus*, notwithstanding the fact that two specimens have the black jugular color interrupted. This fact

might indicate that they belong with *S. m. intermedius*, the bird from Panama and Veragua, but in other characters they are typical of *medianus*, being darker gray on the forehead, and having the belly grayish rather than brownish. Moreover, the specimens in question are from a locality midway between the type localities of the above two races, and it is reasonable to expect that signs of intergradation might occur.